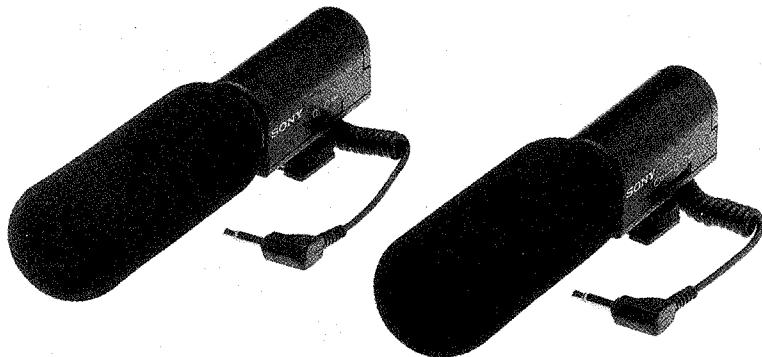


ECM-K57/Z157

SERVICE MANUAL

US Model
E Model



ECM-K57

ECM-Z157

SPECIFICATIONS

(ECM-K57)

General

Type Electret condenser microphone

Microphone output plug L-shaped miniplug

Dimensions $36 \times 47 \times 145$ mm (w/h/d)
($1\frac{1}{16} \times 1\frac{7}{8} \times 5\frac{3}{4}$ inches)

Weight Approx. 70g (2.47oz) (including battery)

Supplied accessories

Sony battery SUM-3(NS) (1)

Performance

Frequency response 150-12,000 Hz

Output impedance $400\Omega \pm 30\%$

Output level (deviation) ± 4 dBm

| | Effective output level ¹ | Signal to noise ratio ² |
|------------------|-------------------------------------|------------------------------------|
| Uni-directional | -46 dBm | More than 62 dB |
| Omni-directional | -47 dBm | More than 59 dB |

¹ 0 dBm = 1 mW/Pa, 1,000 Hz ² 1,000 Hz•1 Pa

1 Pa = 10μ bar = 94 dB SPL

Power requirements

Normal operating voltage: 1.5 V

Battery life Approx. 1500 hours of continuous use, using Sony SUM-3(NS) battery

Maximum sound pressure input level³

Uni/omni-directional: more than 110 dB SPL

³ The mean value is taken and converted to the equivalent input sound level. 0 dB SPL = 2×10^{-5} Pa

Environmental temperatures

0°C to +60°C (+32°F to +140°F) for operation

(ECM-Z157)

General

Type Electret condenser microphone

Microphone output plug L-shaped miniplug

Dimensions $36 \times 47 \times 145$ mm (w/h/d)
($1\frac{1}{16} \times 1\frac{7}{8} \times 5\frac{3}{4}$ inches)

Weight Approx. 75 g (2.65 oz) (including battery)

Supplied accessories

Carrying case (1)

Sony battery SUM-3(NS) (1)

Performance

Frequency response Narrow angle: 300-10,000 Hz

Uni-directional: 150-12,000 Hz

Omni-directional: 150-12,000 Hz

Output impedance $400\Omega \pm 30\%$

Output level (deviation) ± 4 dBm

| | Effective output level ¹ | Signal to noise ratio ² |
|------------------|-------------------------------------|------------------------------------|
| Narrow angle | -34 dBm | More than 60 dB |
| Uni-directional | -46 dBm | More than 62 dB |
| Omni-directional | -47 dBm | More than 59 dB |

¹ 0 dBm = 1 mW/Pa, 1,000 Hz ² 1,000 Hz•1 Pa

1 Pa = 10μ bar = 94 dB SPL

Power requirements

Normal operating voltage: 1.5 V

Battery life Approx. 800 hours of continuous use, using Sony SUM-3(NS) battery

Maximum sound pressure input level³

Narrow angle: more than 100 dB SPL

Uni/omni-directional: more than 110 dB SPL

³ The mean value is taken and converted to the equivalent input sound level. 0 dB SPL = 2×10^{-5} Pa

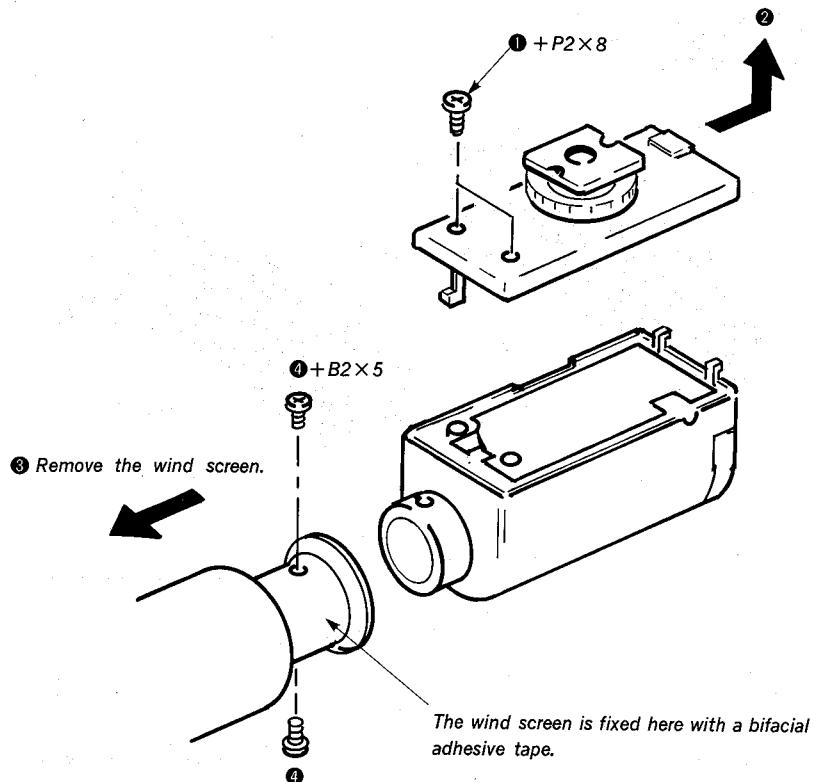
Environmental temperatures

0°C to +60°C (+32°F to +140°F) for operation

ELECTRET CONDENSER MICROPHONE
SONY[®]



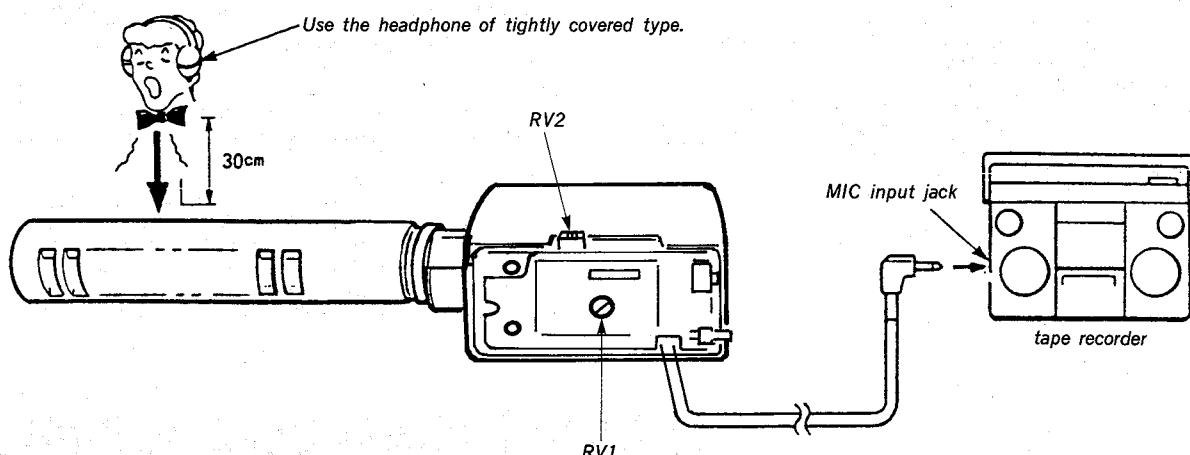
CASE REMOVAL

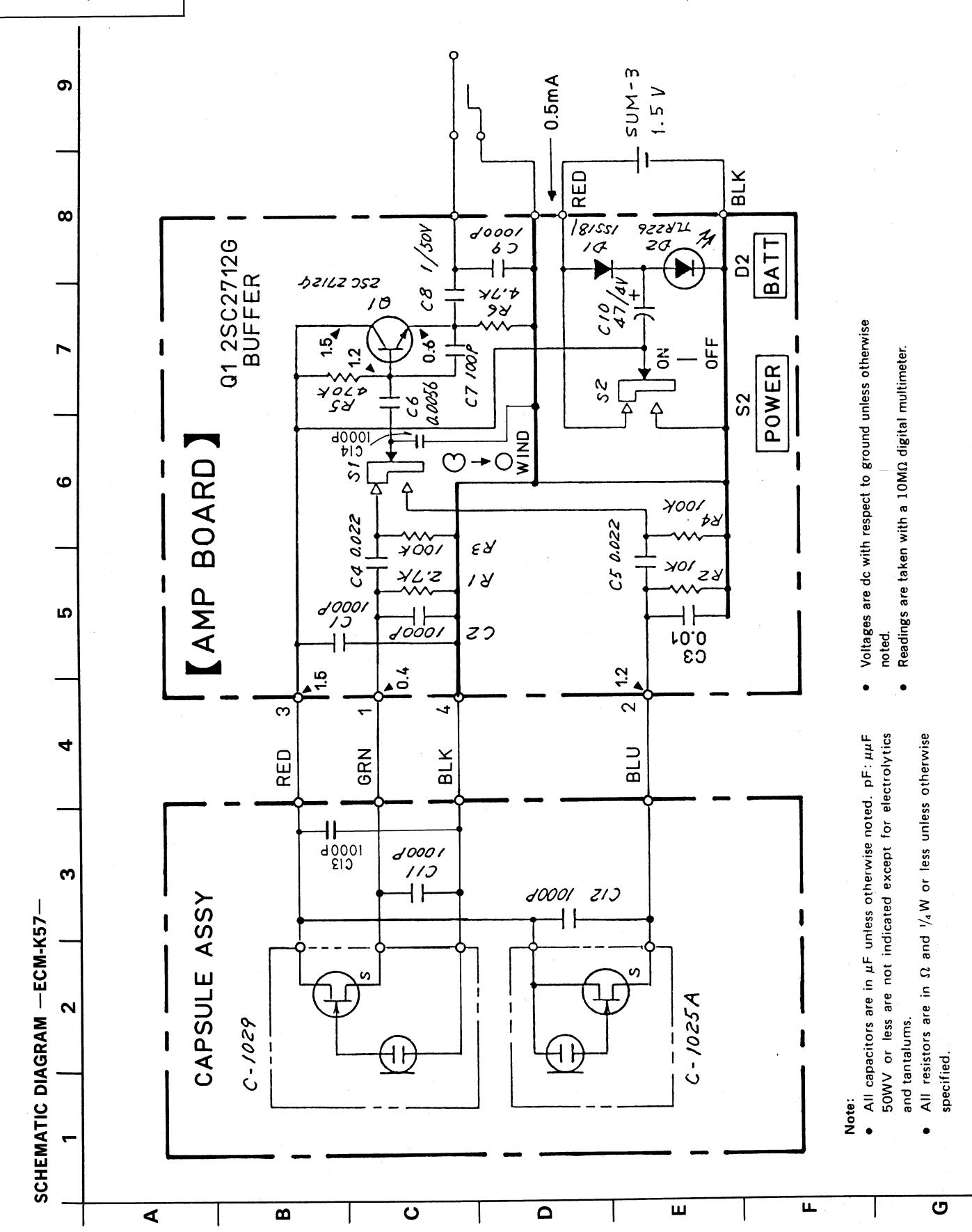
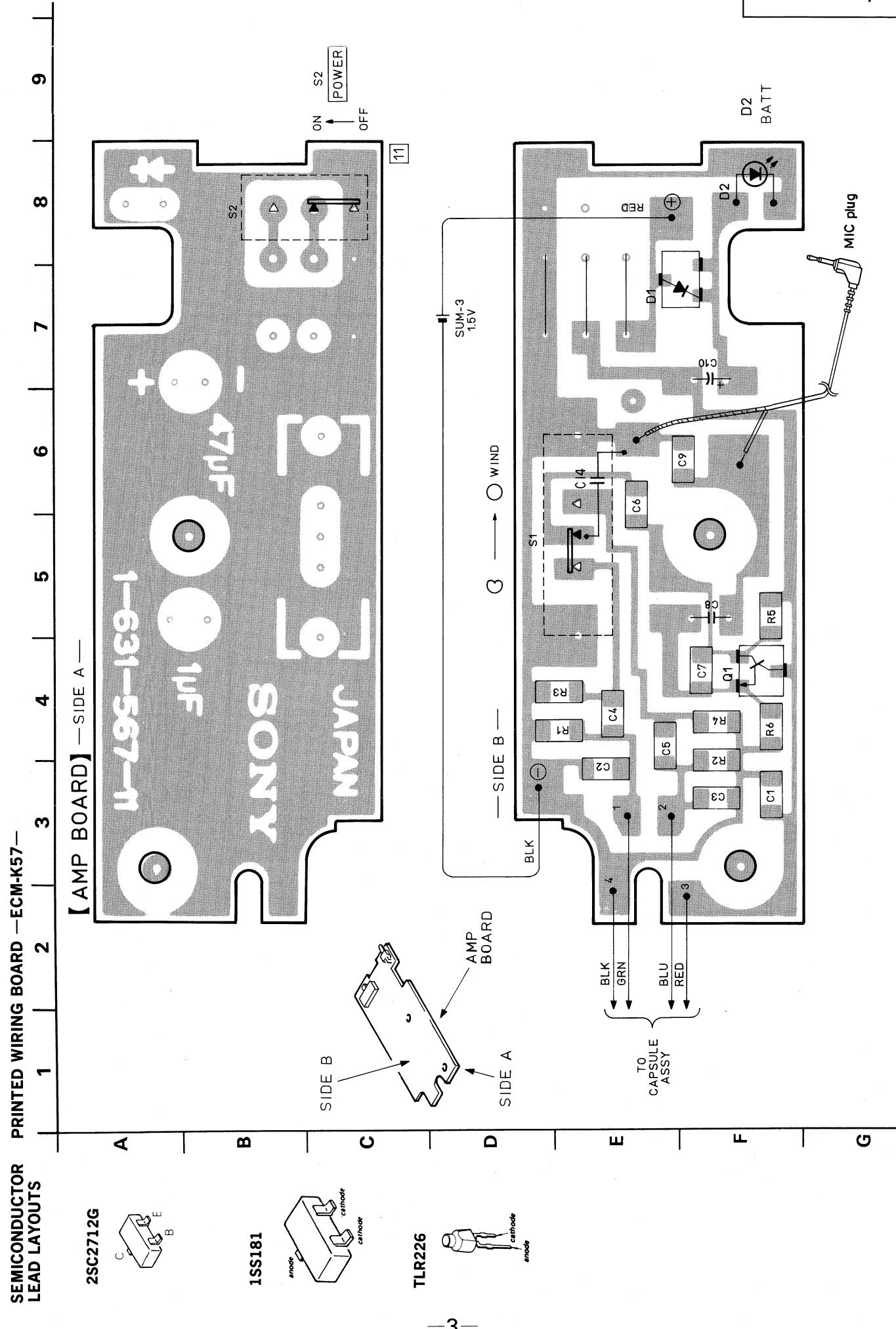


DIRECTIVITY ADJUSTMENT

Make this adjustment in replacement of Microphone capsule Assy, Q1, R3, R4 and R5.

1. Set RV2 to the narrow directivity ∞ .
2. Connect the tape recorder have attached to MIC input jack.
3. Make voice in the direction at a right angle against capsule.
4. Adjust RV1 by the use of an adjusting driver insulated so as to make the minimum output from headphone output.





**SEMICONDUCTOR
HEAD LAYOUTS** **PRINTED WIRING BOARD — ECM-Z157—**

**SEMICONDUCTOR
HEAD LAYOUTS**

1 2 3

2SC2712G

A vertical diagram showing a microphone connection. At the top, a 'MIC plug' is shown with a cable leading down to a 'BOARD' component. The 'BOARD' is labeled '[AMP BOARD] — SIDE A —'. A small rectangular box is positioned to the right of the 'BOARD' label.

ECM-K57/Z15

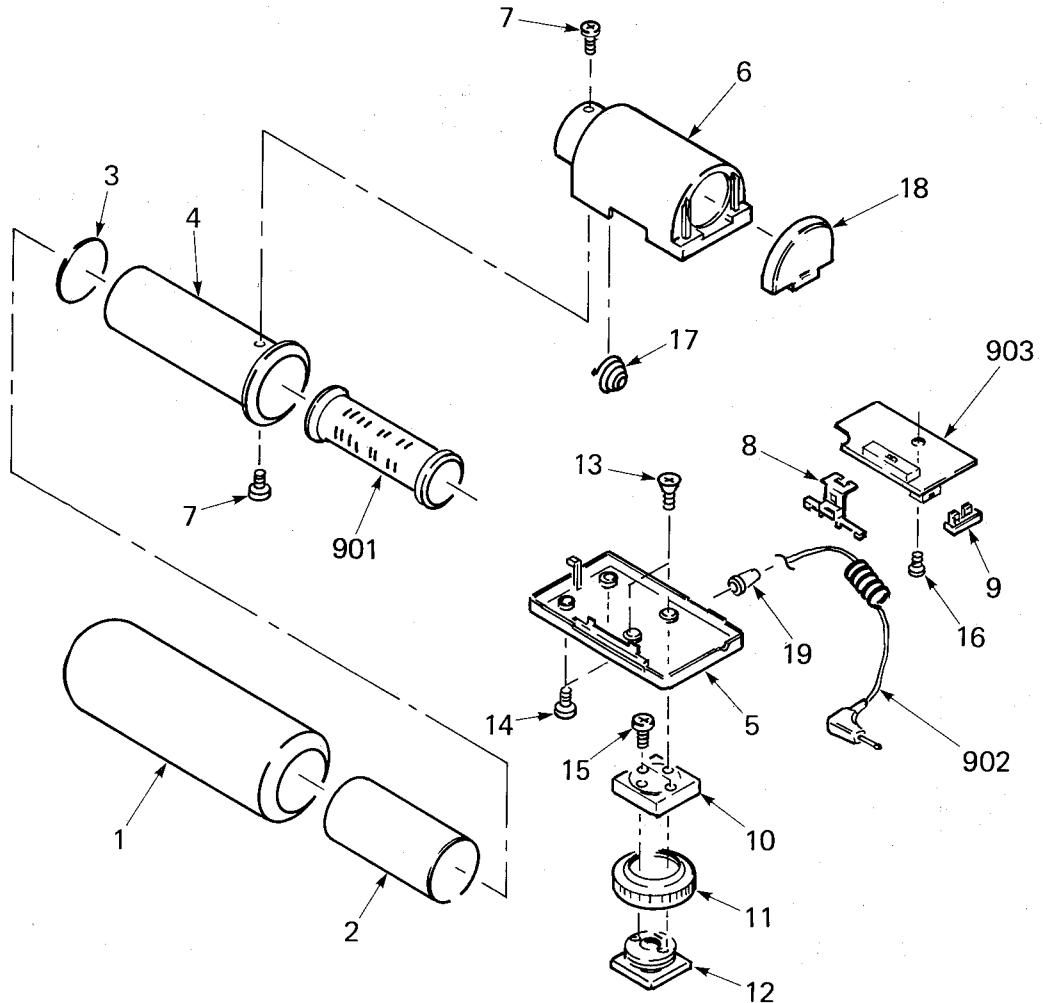
Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a $10\text{M}\Omega$ digital multimeter.

EXPLODED VIEW AND PARTS LIST

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



| Ref. No. | Part No. | Description |
|----------|------------------------------|---|
| 1 | 2-537-340-01 | WINDSCREEN |
| 2 | 3-831-441-XX | SCREEN, SIDE |
| 3 | 3-831-441-XX | SCREEN, TOP |
| 4 | 2-537-344-01 | CASE, MICROPHONE |
| 5 | 2-537-377-01 | CHASSIS |
| 6 | X-2533-821-1 X-2537-309-1 | CASE ASSY (ECM-K57) CASE ASSY (ECM-Z157) |
| 7 | 4-908-792-51 | SCREW (B2×5), TAPPING, PI |
| 8 | 2-537-369-01 | KNOB (VOLUME) |
| 9 | 2-537-370-01 | KNOB (SWITCH) |
| 10 | 2-533-691-01 | DAMPER, LINING |
| 11 | 2-533-369-01 | KNOB, FIXED |
| 12 | 2-533-697-01 | HOLDER, SHOE |

| Ref. No. | Part No. | Description |
|----------|--------------------------------|---|
| 13 | 7-621-559-20 | SCREW +K2.6×4 |
| 14 | 7-685-105-19 | SCREW +P2×8 TYPE2 NON-SLIT |
| 15 | 7-685-104-21 | SCREW +P2×6 TYPE2 SLIT |
| 16 | 7-685-103-19 | SCREW +P2×5 TYPE2 SLIT |
| 17 | 3-578-236-00 | SPRING |
| 18 | X-2537-307-1 | COVER ASSY, BATTERY |
| 19 | 2-537-341-01 | BUSHING |
| 901 | X-2533-820-1 X-2537-308-1 | CAPSULE ASSY (ECM-K57) CAPSULE ASSY (ECM-Z157) |
| 902 | 1-557-873-31 | CORD, MICROPHONE (ONE CORE) |
| 903 | *A-4518-372-A *A-4518-371-A | MOUNTED PCB, AMPLIFIER (ECM-K57) MOUNTED PCB, AMPLIFIER (ECM-Z157) |

ELECTRICAL PARTS LIST**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: $\mu\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:
 UA...: μ A..., UPA...: μ PA...,
 UPC...: μ PC, UPD...: μ PD...

(ECM-K57)

| Ref. No. | Part No. | Description |
|----------|---------------|-------------------------------|
| 903 | *A-4518-372-A | MOUNTED PCB, AMPLIFIRE |
| C1 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C2 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C3 | 1-163-021-11 | CERAMIC CHIP 0.01MF 10% 50V |
| C4 | 1-163-037-11 | CERAMIC CHIP 0.022MF 10% 25V |
| C5 | 1-163-037-11 | CERAMIC CHIP 0.022MF 10% 25V |
| C6 | 1-163-018-00 | CERAMIC CHIP 0.0056MF 10% 50V |
| C7 | 1-163-117-00 | CERAMIC CHIP 100pF 10% 50V |
| C8 | 1-124-499-11 | ELECT 1MF 20% 50V |
| C9 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C10 | 1-124-432-00 | ELECT 47MF 20% 4V |
| D1 | 9-988-349-01 | DIODE ISS181 |
| D2 | 8-719-812-26 | DIODE TLR226 |
| Q1 | 8-729-271-22 | TRANSISTOR 2SC2712G |
| R1 | 1-216-059-00 | METAL GLAZE 2.7K 5% 1/10W |
| R2 | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W |
| R3 | 1-216-097-00 | METAL GLAZE 100K 5% 1/10W |
| R4 | 1-216-097-00 | METAL GLAZE 100K 5% 1/10W |
| R5 | 1-216-113-00 | METAL GLAZE 470K 5% 1/10W |
| R6 | 1-216-065-00 | METAL GLAZE 4.7K 5% 1/10W |
| S1 | 1-572-017-11 | SWITCH, SLIDE |
| S2 | 1-572-012-11 | SWITCH, SLIDE (POWER) |
| 901 | X-2533-820-1 | CAPSULE ASSY |
| 902 | 1-557-873-31 | CORD, MICROPHONE (ONE CORE) |

ACCESORY AND PACKING MATERIAL

| Part No. | Description |
|--------------|---------------------|
| 2-537-363-01 | FRAME, INNER |
| 2-538-747-01 | BLISTER |
| 2-538-749-11 | CARDBOARD |
| 3-750-653-11 | MANUAL, INSTRUCTION |

(ECM-Z157)

| Ref. No. | Part No. | Description |
|----------|---------------|--------------------------------|
| 903 | *A-4518-371-A | MAINTAINED PCB, AMPLIFIRE |
| C1 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C2 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C3 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C4 | 1-163-021-00 | CERAMIC CHIP 0.01MF 10% 50V |
| C5 | 1-135-072-21 | TANTAL CHIP 0.22MF 20% 35V |
| C6 | 1-135-072-21 | TANTAL CHIP 0.22MF 20% 35V |
| C7 | 1-135-150-21 | TANTAL CHIP 3.3MF 20% 6.3V |
| C8 | 1-135-072-21 | TANTAL CHIP 0.22MF 20% 35V |
| C9 | 1-163-021-00 | CERAMIC CHIP 0.01MF 10% 50V |
| C10 | 1-163-117-00 | CERAMIC CHIP 100pF 10% 50V |
| C11 | 1-163-986-00 | CERAMIC CHIP 0.027MF 10% 25V |
| C12 | 1-135-150-21 | TANTAL CHIP 3.3MF 20% 6.3V |
| C13 | 1-163-117-00 | CERAMIC CHIP 100pF 10% 50V |
| C14 | 1-135-150-21 | TANTAL CHIP 3.3MF 20% 6.3V |
| C15 | 1-163-018-00 | CERAMIC CHIP 0.0056MF 10% 50V |
| C16 | 1-163-117-00 | CERAMIC CHIP 100pF 10% 50V |
| C17 | 1-124-499-11 | ELECT 47MF 20% 4V |
| C18 | 1-163-009-11 | CERAMIC CHIP 0.001MF 10% 50V |
| C19 | 1-124-432-00 | ELECT 47MF 20% 4V |
| C20 | 1-124-432-00 | ELECT 47MF 20% 4V |
| C21 | 1-135-070-00 | TANTAL CHIP 0.1MF 20% 35V |
| C22 | 1-163-117-00 | CERAMIC CHIP 100pF 10% 50V |
| D1 | 9-988-349-01 | DIODE ISS181 |
| D2 | 8-719-812-26 | DIODE TLR226 |
| Q1 | 8-729-271-22 | TRANSISTOR 2SC2712G |
| Q2 | 8-729-271-22 | TRANSISTOR 2SC2712G |
| Q3 | 8-729-271-22 | TRANSISTOR 2SC2712G |
| Q4 | 8-729-271-22 | TRANSISTOR 2SC2712G |
| R1 | 1-216-057-00 | METAL GLAZE 2.2K 5% 1/10W |
| R2 | 1-216-097-00 | METAL GLAZE 100K 5% 1/10W |
| R3 | 1-216-059-00 | METAL GLAZE 2.7K 5% 1/10W |
| R4 | 1-216-113-00 | METAL GLAZE 470K 5% 1/10W |
| R5 | 1-216-065-00 | METAL GLAZE 4.7K 5% 1/10W |
| R6 | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W |
| R7 | 1-216-097-00 | METAL GLAZE 100K 5% 1/10W |
| R8 | 1-216-113-00 | METAL GLAZE 470K 5% 1/10W |
| R9 | 1-216-069-00 | METAL GLAZE 6.8K 5% 1/10W |
| R10 | 1-216-037-00 | METAL GLAZE 330 5% 1/10W |
| R11 | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W |
| R12 | 1-216-049-00 | METAL GLAZE 1K 5% 1/10W |
| R13 | 1-216-107-00 | METAL GLAZE 270K 5% 1/10W |
| R14 | 1-216-061-00 | METAL GLAZE 3.3K 5% 1/10W |
| R15 | 1-216-033-00 | METAL GLAZE 220 5% 1/10W |
| R16 | 1-216-113-00 | METAL GLAZE 470K 5% 1/10W |
| R17 | 1-216-065-00 | METAL GLAZE 4.7K 5% 1/10W |
| R18 | 1-216-025-00 | METAL GLAZE 100 5% 1/10W |
| RV1 | 1-237-119-11 | RES,ADJ,METAL GLAZE 22K |
| RV2 | 1-238-652-11 | RES,VAR,SLIDE(WITH SWITCH) 50K |
| S1 | 1-572-012-11 | SWITCH,SLIDE (POWER) |
| 901 | X-2537-308-1 | CAPSULE ASSY |
| 902 | 1-557-873-31 | COAD,MICROPHONE(ONE CORE) |

ACCESORY AND PAKING MATERIAL

| Part No. | Description |
|--------------|--------------------|
| 2-537-363-01 | FRAME, INNER |
| 2-537-365-01 | BLISTER |
| 2-537-367-01 | CARDBOARD |
| 2-539-310-01 | CASE,CARRYING |
| 3-750-652-11 | MANUAL,INSTRUCTION |